DOCUMENT RESUME

ED 331 623 PS 019 488

AUTHOR Jackson, Jacquelyne Faye
TITLE Multiple Caregiving among African Americans and Infant Attachments: Issues and an Exploratory Study.
PUB DATE 90
NOTE 65p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Attachment Behavior; Black Culture; Black Family; *Blacks; *Child Caregivers; *Cultural Context; Cultural Differences; Exploratory Behavior; *Infants; Mothers; Sex Differences; Socialization
IDENTIFIERS *African Americans; Distress; *Multiple Caregivers

ABSTRACT

Attachments of African-American infants should be studied with a focus on cultural practices involved with multiple caregiving. Assessments of African-American infant attachments that use standards of a culture in which care is provided by a primary caretaker should be replaced by assessment based on the cultural perspective of African-Americans. This exploratory study tested 37 African-American 1-year-olds in several separation/reunion situations involving the mother and a second caregiver. Results showed consistent reactions of infants to each attachment figure. There was no bias toward mothers as a class. Results for various behavior scales indicated: (1) infant use of attachment figures as a basis for exploration; (2) sociability with stranger independent of attachment figure presence; (3) distress when infant was left alone with stranger; and (4) no difference in seeking proximity, maintaining contact, being inattentive, or resisting after each type of separation/reunion. Hypotheses that infants would respond similarly to both attachment figures and use both attachment figures as a basis for exploration were supported. The hypothesis that infants who were stressed would use caregivers for consolation was not supported. It is inferred that culturally sanctioned patterns of caregiving do not produce pathological relationships. Rather, they produce traits consonant with African-American socialization objectives. (BC)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED331623

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

# Multiple Caregiving Among African Americans and Infant Attachments: Issues and an Exploratory Study

Jacquelyne Faye Jackson

University of California, Berkeley

Institute of Human Development

Data collection for the study discussed in this paper was supported in part by a grant from Delta Sigma Theta, Inc. and a research fellowship from the Center for the Study, Education and Advancement of Women--University of California, Berkeley under the aegis of the Ford Foundation. Help in data collection and analysis was provided by: Sharon Christal, Monte Cohen, James Cole, Ethel Harrison, Sunjoo Kim, Christine Nakata, Frances Nakata, Roxanne Smith, Verleeta White and Kim Bailey.

I gratefully acknowledge Diana Baumrind for her critical reading and comments on this paper, and Wayne Shoumaker for his comments on data analyses. I also thank William Meredith for his reading of a precursor to this paper and suggestions on presentation of data analyses.

Running Head: MULTIPLE CAREGIVING AND AFRICAN AMERICANS

PS 019488

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Jacquelyne Faye Jackson
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

Abstract

Attachments of African Americans should be studied with a focus on cultural practices of multiple caregiving. Assessing African American infant attachments using behavior standards of infants from a culture with one primary caretaker is misplaced and should be replaced by standards based on the cultural perspective of African Americans. An exploratory study was undertaken to do this. The monotropy thesis that all infants have a hierarchy of attachments was tested and results form a substantial but incomplete challenge to it.

Multiple Caregiving Among African Americans and Infant Attachments: Issues and an Exploratory Study

African Americans are an overlooked cultural group who should receive the focused attention of scholars and investigators of infant attachment and early social-emotional development. Considerable discussion and controversies have been generated by cross-national studies that raise questions about the validity of the attachment paradigm and assessment procedures for diverse cultural groups (e.g. Kuhn, 1990; Research and Clinical Center for Child Development [RCCCD], 1990; Tavecchio & van Ijzendoorn, 1987). However, there has been no corresponding attention to African Americans as a cultural group within American society even though they have distinctive cultural practices with implications for the development of early attachments and they also subsist in an ecological niche that differs markedly from that of white middle-class Americans. Nonetheless, African American infants and young children have been incorporated in subject samples in attachment studies in growing numbers with increasing frequency (e.g. Lyons-Ruth, Connell, & Grunebaum, 1990; Crittenden, 1988; Waters, Vaughn, & Egeland, 1980; Hock, 1980) as though the analytic framework and assessment tools developed for white middle-class Americans were valid for them. Specifically, a salient aspect of African American infant and child care that implicates attachment issues is multiple caregiving.

Traditional and contemporary African American child care and

socialization are based on sharing of caregiving by a number of parent figures irrespective of maternal marital status (Shimkin, Louie & Frate 1978; Stack, 1970, 1974, 1975; Young, 1970). As described by ethnographers (Shimkin et al., 1978, p.72), "responsibility for protection, care, instruction, and discipline of all children is diffused among related adults and, indeed, all adults. Whether the relationships are actually centered in the biological family depends upon circumstances and personalities." Caregiving arrangements are closely associated with reciprocal helping modes of life in extended family groups yet distinguishable from family structure. Caregiving transpires across household, gender and age groupings of caregivers in the network of kin and friends of the mother. Focusing specifically on infant and toddler aged children, Young (1970) described typical mothers as important figures in their young children's affective lives but nonetheless working women who relied on shared caregiving arrangements to meet dual responsibilities of child rearing and supplementing family finances.

Without acknowledging this aspect of child rearing as a facet of African American culture, an indirect mode of addressing it has evolved in the attachment research literature. For example, in the early empirical literature on American infant-parent relationships explicit disadvantageous effects of multiple caregivers were hypothesized for a study with a combined sample of white and African American subjects and marginal support for the

hypothesis was reported (Caldwell, Hersher, Lipton, Richmond, Stern, Eddy, Drachman, & Rothman, 1963). Later, in a race comparative study selection of subjects was restricted to white and (atypical) African American infants with mothers who were their unequivocal primary caregivers (Clarke-Stewart, 1973); less favorable developmental outcomes were reported for African American infants. Ultimately, African American infants were studied using the strange situation procedure and evaluative classification criteria which were derived from study of white middle-class American infants with housewife mothers who were their unequivocal primary caregivers (Bell, cited in Ainsworth, Blehar, Waters & Wall, 1978). A higher percentage of African American infants than white middle-class infants were judged insecurely attached to their mothers and the difference was attributed to poor living conditions, including "... mother absence from the home for long daily periods, and multiplicity and discontinuity in regard to substitute caregivers" (Ainsworth, et al., 1978, p. 166). This negative evaluation of multiple caregivers stems from the infrastructure of the primary attachment theorist's work (Bowlby, 1951, 1958, 1969, 1982) and two of his main contentions: Diffusion of infant care is damaging, and infants need continuous care from a principal mother figure throughout the first years of life even though they may have secondary caretakers.

There are cross-national, cross-cultural studies of infant

attachment in groups that practice various forms of multiple caregiving (Leiderman & Leiderman, 1974; Marvin, VanDevender, Iwanaga, S. LeVine, & R. LeVine, 1977, Reed & Leiderman, 1981; Fox, 1977; Tavecchio & van Ijzendoorn, 1987; Smith & Noble, 1987; Goosens, 1987), but their findings do not present a coherent picture and their implications for attachments in African American infants are unclear for methodological reasons (i.e. diverse study conditions and criteria for assessing attachments). The most recently reported cross-national, cross-cultural studies are strictly limited to assessment procedures and evaluative criteria derived from modal behaviors patterns of white middle-class American infants with housewife mothers (e.g. Kermoian & Leiderman, 1986; Sagi, Lamb, Lewkowicz, Shoham, Dvir & Estes, 1985). In other words an etic perspective--using a paradigm from one culture to examine another--(Berry, 1979) was a central feature of the research. Some developmental psychologist interested in cross-cultural study of attachment advocate the continuation of an "imposed etic validity" approach (e.g. van Ijzendoorn, 1990). In contrast, some cultural anthropologists criticize the existing trend in cross-cultural attachment research as overly reliant on evaluative criteria specific to traditional white middle-class American culture (e.g. LeVine & Miller, 1990), and characterize approaches to cross-cultural study of infant development that are derived from psychoanalysis as prone to Eurocentrism (LeVine, 1990).

Ainsworth's (1967) seminal field observational study of Ugandan infants was the first cross-national, cross-cultural work on attachment, and is sometimes presumed to have implications for Negroid racial groups because the subjects were black Africans. Its implications for attachments in the cultural context of African American infant and child care are limited, however, because of differences between Ganda and African American cultures with respect to the shared caregiving factor; the Ganda resemble white middle-class Americans more than African Americans. Ainsworth's Ugandan subjects were from the relatively Westernized ethnic Ganda for whom a nuclear family removed from an extended family social context was the modal family form (c.f. Nahemow, 1984), and who did not practice multiple caregiving extensively (Ainsworth, 1967). Moreover, as might be expected in the Ganda cultural context Ainsworth found that the extent to which a Ganda mother was a principal caretaker of her infant was a salient discriminator between what she judged to be qualitatively different attachments: a) securely attached infants received most of their care from their mothers, b) insecurely attached infants received a substantial amount of their care from individuals other than their mothers, and c) unattached infants received little care altogether (Ainsworth, 1967 P.91, p.395-396).

A key issue and difficulty in attempting to tap existing theory and research to understand early attachments in African Americans is Bowlby's (1969, 1982) unchallenged contention that

contemporary cultural variations are superfluous to core elements of human attachment propensities. According to his explication attachment capacities are biologically determined and were shaped by evolutionary processes culminating in the social context and subsistence ecology of human life in prehistoric hunter-gatherer societies. Pursuant to this, attachment adherents have focused on the contemporary !Kung San (Lee, 1979; Lee & DeVore, 1976; DeVore & Konner, 1974) of the South African Kalahari desert who are one the few remaining hunter-gatherer peoples as a model of primordial human infant-mother attachments. Among the San the mother is clearly the primary caretaker of the infant in the first years of life. However, very recent ethnographic reports of infant care among the Efe of the Ituri Forest of Zaire (Winn, Tronick & Morelli, 1989; Tronick, Morelli & Winn, 1987; Tronick, Winn & Morelli, 1985) give reason to question singular reliance on reports of the !Kung San as a model for infant care in prehistoric hunter-gatherer groups. The Efe are a seminomadic group traditionally considered a hunter-gatherer people (Winn, Tronick & Morelli, 1989) who practice extensive multiple caregiving of infants from birth and throughout the first years of life. (To date, there are no reports of analyses of Efe infant-caregiver attachments.)

In looking for contemporary expressions of adaptive forms of presumably evolved infant attachment capacities, attachment researchers have studied ascendant majorities within countries

that dominate the global political economy that also have sociocultural niches that diverge from prehistoric hunter-gatherers in innumerable ways (i.e. the middle class of the United State, Germany, Japan and Israel). Even in this special subset of world peoples no common modal pattern of infant-parent figure attachments has been found. Nonetheless, current discussion of appropriate criteria for judging adaptive, psychologically healthy infant-caregiver attachments revolve around modal behavior patterns for traditionally reared white middle-class American infants (e.g. Kuhn, 1990; RCCCD, 1990), and only indirectly acknowledges the possibility that characteristics of attachments may inevitably reflect culturally determined effects of socialization to a greater degree than universal biological propensities.

A different approach to examining early attachments in African Americans is needed. An emic approach--one that frames analyses from an African American value perspective--(Berry, 1979) is one alternative adopted for the study to be reported. An emic approach recognizes that what is adaptive for African Americans may not be identical to what is adaptive for white middle-class Americans (Ogbu, 1981). An emic approach also dictates a recognition of African American sociocultural structure as it pertains to child care, how this structure relates to group subsistence resources and constraints, and what African Americans value in relationships that are social-emotional outcomes of their

caregiving efforts. With respect to this last point, African American scholars (e.g. White, 1987; Barnes, 1980) maintain that strength and extensiveness of social relationships within African American kin and community groups constitute the essence of group identity and a critical element of personal identity. Tronick and his associates (Tronick, et al., 1987) make a similar point concerning the Efe; they maintain that the practice of shared caregiving is a major factor shaping group identification during Efe development.

The Confluence of Subsistence and Sociocultural Factors in African American Infant Care

Constraints on striving for economic self-sufficiency and self-control have been the foremost challenge to adaptation for African Americans throughout their history in the Americas and continue to be. A primary, group strategy for addressing this challenge has been paid workforce participation for women with children. Sixty-six percent of married African American women with a child under three years old work and 44% of single African American women with children that age work (Hayghe, 1986; Children's Defense Fund, 1985). Regardless of marital status, African American female labor force participation is positively correlated with education and family economic status, and African American females who are high school and college graduates work at much higher rates than their white counterparts (Meisenheimer, 1990). Employed African American mothers of young children are

also distinguished by reliance on relatives who are extended family members to care for their children while they work (O'Connell & Rogers, 1983, pp.24-26). Moreover, the pattern of African American maternal employment has existed throughout this century (U.S. Bureau of the Census, 1974, p.336) and therefore distinguishes African Americans from majority Americans who have only recently experienced large numbers of working women with small children in the work force.

One explanation for this high rate of maternal employment is current and historical discrimination and disadvantage in employment for both male and female African Americans. Even at the highest education levels African American men earn less than their white counterparts and suffer higher rates of unemployment (Meisenheimer, 1990). This situation has made maternal income a vital element of financial viability in African American families. Moreover, African American women and men have worked and continue to work under conditions that are unattractive to others such as night, evening and split shifts (Presser, 1987, 1986) and second jobs outside of the home (Stinson, 1990).

African American adults have adopted flexible family roles in part to accommodate the demands of employment. In two-parent families spousal roles are egalitarian and one concomitant is routine involvement of fathers in caregiving tasks (e.g. Billingsley, 1968; Scanzoni, 1975; Beckett, 1976). Relatives of single mothers are also caregivers when mothers work, even if the

relatives work themselves (Presser, 1989). Most likely, the cultural ethic of affective as well as material reciprocity that generates the relatioships between adults that produce these roles (Stack, 1974) creates an affective climate for the caregiver-child relationship that differs from that of the hired caregiver-child relationship in majority American culture (Werner, 1984). To complement this caregiving context infants and children of employed African American mothers are socialized to respond in a positive, equitable way to caregivers who are essentially interchangeable, and a generally gregarious personality is cultivated (Young, 1970). The question about child psychological development that ensues from this socialization thrust is, do African American infants develop multiple relationships that are essentially equivalent attachments? To begin to address this question in an exploratory way, the findings of a study of healthy African American infants with working mothers will be reported.

The Study Questions in Attachment Terms

In attachment terms the focal question is, do African American infants develop monotropic bias toward one caregiver and demonstrate a stronger tie to one person from their set of caregivers? As delineated by Bowlby (1969, 1982) the monotropy principle specifies that an infant with nonpathological socio-emotional development will develop an attachment to a preferred, primary mother figure even though he or she may have several attachment figures and will show a clear bias by directing

stronger attachment behaviors toward the preferred figure. In addition, this bias is most evident when focused attachments are consolidated which occurs when infants can fully locomote at about one year old. Ainsworth (1982) contended that monotropic bias could not be detected from naturalistic observation of infant-caregiver interaction because stress activated attachment behaviors would be unlikely to occur in low stress, familiar settings. She (Ainsworth, 1982) maintained that monotropic bias would surface when the infant was moderately distressed, that is when tired or ill. This suggests that an induced state of infant distress like that presumed to occur in separation-reunion laboratory studies of attachment would provide a sufficient precondition for a test of the monotropy principle for African American infants.

Another question is, which behaviors are valid and appropriate criteria for detecting attachments? Two contrasting affective states must be induced in an infant before true indices of attachment can be discerned. First, there are effects of a distressed state which activate what is referred to in a delimited sense as the attachment behavioral system. Bowlby (1958) originally identified infant behaviors that promote close proximity to an attachment figure as expressions of an activated attachment behavioral system. Second, there are effects of a contented and composed state which promote activation of the exploratory behavioral system. Adding to Bowlby's focus on

proximity seeking, Ainsworth (1967) identified an infant's use of the attachment figure as a secure base for exploration of the physical environment as an expression of an activated exploratory behavioral system. Subsequently, Bowlby (1969, 1982) and Ainsworth (1969, 1978) added separation distress and variation in response during reunion with an attachment figure following a separation as indicators of attachment. Currently, reunion behaviors are emphasized because research has shown them to be important in predicting different developmental trajectories for infants from Euro-american cultural groups. However, the significance of reunion behaviors for infants from other cultural backgrounds remains unclear. Given the paucity of attachment research on African Americans, it seemed reasonable to use the full range of behaviors as appropriate criteria for evaluating attachments in African American infants.

Concomitant to selection of behavioral criteria for assessing attachments is the question of interpretive validity of responses presumed to be indices of attachment. Results of a pilot study (Hansen, 1980) indicated the importance of this issue for evaluating laboratory behavior of African American infants. The object of study was behavior of African American infants with working mothers from low risk backgrounds in strange situation sessions. Even though the strange situation is presumed to be mildly stressful to infants, the majority of pilot study infants did not appear stressed by the separations entailed in strange

situation sessions. Instead, playfulness and exploratory behaviors were salient, even in reunion episodes. Superficially, infant responses fit the profile of white middle-class American infants judged avoidant and insecure in their attachments on the basis of Ainsworth's ( Ainsworth et al., 1978) classification scheme. However, viewed more closely pilot study infants appeared outgoing and casually inattentive due to preoccupation with play.

The pilot study implicated the need for modification in the design of laboratory procedures chosen to study attachments in African American infants as well as methods of infant behavior analysis. Modified procedures need to surpass the strange situation procedures in detecting the specific nature of infant affective reponses to separations, reunions, and to the laboratory setting in general. In other words, laboratory and assessment procedures need to make it possible to determine whether or not attachment, exploratory or both behavioral systems are in fact activated during a session. An experimental procedure (Kotelchuck, 1976) was chosen for the study to be reported that held promise of meeting these needs. It has the added advantage of allowing direct comparison of infant responses toward two attachment figures on all of the attachment behaviors of interest based on infant behavior in a single laboratory session.

Research hypotheses are framed on the basis of an emic perspective as well as attachment concepts. The premise is that African American cultural practices of shared caregiving are

compatible with normative infant responses that do not indicate incipient psychopathology. The first hypothesis is that African American infants with multiple caregivers use their attachment figures as secure bases for exploring the environment when composed and also seek proximity to them when stressed. Practical constraints of the laboratory procedure limited this exploratory study to comparison of infant responses to only two of their multiple caregivers. The mother and the second most important caregiver according to her designation were the attachment figures chosen. Framed on the basis of this constraint, the second hypothesis is a direct challenge to the monotropy thesis: African American infants show a pattern of similar strength of responses toward two of their attachment figures for a full range of attachment related behaviors, and their two attachment figures serve the functions of a primary attachment figure equally well in a laboratory setting. In operational terms the hypotheses are that normative responses of African American infants reveal that: a) infants' responses to their attachment figures are similar and equitable for a full range of attachment related behaviors, b) experimental manipulations of attachment figures' presence cause infants, if composed, to use their attachment figures as secure bases for exploring the environment, and c) manipulations of attachment figures' presence cause infants, if stressed, to use their attachment figures as sources of consolation. Support for all three of these hypotheses is necessary to fully refute the

monotropy thesis.

## Method

### Subjects

Twenty-one male and 16 female one-year-olds along with their mothers and second attachment figures participated in the study. The infants were between 12.1 and 13.5 months old at the time of the laboratory session. Local birth records were used to identify and recruit infants with the following characteristics: (a) no birth defects, (b) a mother 20 years old or older, (c) both a mother and a father who were African Americans, and (d) a mother who had an occupation or was a student. Each mother was asked to identify a second adult who was the most important caregiver in her infant's life other than herself. As a result of this request, all 32 of the biological fathers in two-parent families participated and five female relatives participated with the five single mothers in the sample; there were 37 second attachment figures in total. Occupational and educational information revealed that working and middle classes were equally represented among the families (Blau & Duncan, 1967).

Interviews with adult participants revealed that for both middle and working class families, caregiving arrangements were diverse and complex because parents' work schedules were incongruent and frequently entailed unconventional hours (e.g. attributable to evening or split shifts, demands of a professional occupation, second jobs, etc.); 75% of mothers and fathers did not

work 9-to-5 schedules, and in 65% of the two-parent families parents' work schedules were incongruent. Thirty-one of the 37 infants received routine supplementary care from one or more caregivers acquired through parental kin and friend networks in addition to care from the attachment figures participating in the laboratory session. For all but one of the 37 infants, supplementary care was provided in private home settings or in day care homes; the exceptional infant attended a day care center.

Procedure

The Kotelchuck (1976) procedure consists of 13 three-minute episodes, each of which functions as a separate experimental trial (i.e. treatment condition). It is compatible with principles of design for time-series experiments (Campbell & Stanley, 1966; Kratochwill 1978), which makes sequential changes due to treatment effects detectable. The presence of each attachment figure and the presence of the stranger are three independent variables that are coordinated and experimentally manipulated to produce cyclical patterns of exits and reentries of adults while the infant remains in the room. The order of attachment figures' initial exits and reentries was counterbalanced as indicated in table 1, which also

---

Insert Table 1 about here

---

shows which adults were present in the room with the infant during each episode.

There is a distinctive structural feature of the Kotelchuck procedure of central importance for the study. As indicated in table 1, infant participants experienced two different types of separations from their attachment figures which were not contiguous. In one type, one attachment figure departed the room but the second attachment figure remained with the infant (i.e. episodes 2 and 8), and minimal or no separation stress reactions were expected. In the other type, only one attachment figure was in the room at the start of a separation, and the departure of that attachment figure left the infant alone with the stranger in a completely unfamiliar setting (i.e. episodes 4 and 10), and separation stress was expected. This difference made it possible to compare the effects of the two types of separations to determine if the second type actually elicited attachment behaviors of the sort that ensue from a stressed state (Bowlby 1969, 1982). The logic for the comparison is based on Bowlby's (1973) observation that the presence of familiar people markedly diminishes or precludes an infant's distress when separated from an attachment figure as well as withdrawn and angry behaviors when reunited with the attachment figure.

The procedure was initiated when an infant and both attachment figures were shown into a 12.5 ft (3.81 m) by 16 ft (4.88 m) playroom at a university facility. The layout of furnishings provided a rug with age appropriate toys in one quadrant along with three adult sized chairs and two child sized

chairs near the outer perimeter of two sides of the rug. Attachment figures were directed to be seated and were instructed to allow the infant to explore the room and toys independently in the first episode of the session. However, attachment figures were encouraged to respond to their child in whatever manner seemed natural to them in all other episodes of the session. The entire session was videotaped through a one-way view mirror by a camera placed in an adjoining room.

The stranger was always a young African American female adult college student. Her role was designed to make her a nonthreatening, attractive social novelty when the infant initially encountered her, friendly at all times, and to encourage sociable infant responses. However, two potentially disconcerting events were built into the stranger role to challenge infant composure and self-assurance during the episodes when the infant and stranger were alone. During the first episode when the infant and stranger were alone the stranger offered the infant a clear plastic container of visible cookies that could not be opened; it was assumed that the frustration of not being able to get the cookies would be mildly distressing. During the second episode when the infant and stranger were alone the stranger found occasion to burst a balloon, ostensibly as an accident; the assumption was that the sudden noise of the explosion would be upsetting.

Dependent Measures

There were seven dependent measures, all of which were 7-point ordinal scales for rating infant behavior in response to an adult or in the presence of an adult (Jackson, in press). The first three scales were developed for the study on the basis of pilot study (Hansen 1980) outcomes. These scales and their high and low anchor points are: (a) exploration-exploratory activity in the presence of an adult without an overt social response; from extensive, independently initiated physical mobility away from adults and focused attention on a specific item, to an absence of exploratory or play behavior independent of social interaction, (b) sociability-sociability with the stranger; from infant initiated and sustained interaction with the stranger or continued interaction with the stranger in spite of minor disconcerting events associated with her, to an absence of attraction to or positive social response to the stranger for the whole episode, and (c) distress-visible distress reactions to an attachment figure's departure from the room; from loud crying and other conspicuous protest behaviors that either could not be alleviated while an attachment figure was absent or aborted the attachment figure's efforts to leave, to an absence of distress behavior or one occurrence of less than 5 seconds.

The four additional scales were modeled after the interactive behavior rating scales developed by Ainsworth (Ainsworth et al., 1978), although the name assigned to one scale differs from its Ainsworth counterpart. The rating criteria for all four scales

are the same as those of the Ainsworth scales except for minor modifications such as the addition of explicit time parameters for making some judgments. The four scales and their high and low anchor points are: (a) proximity seeking-seeking physical proximity to a reentering attachment figure; from the combination of infant initiative to attain contact with an attachment figure and actually achieving contact through that initiative, to an absence of infant initiative to gain contact or proximity to the attachment figure, (b) contact maintaining-maintaining physical contact with a reentering attachment figure once contact is attained; from 90 seconds of contact sustained by the infant's efforts or 2 minutes of contact fully accepted by the infant, to no contact or contact of less than 5 seconds which the infant made no effort to sustain, (c) inattention (similar to Ainsworth's avoidance)-not attending to a reentering attachment figure; from ignoring a reentering attachment figure even though the adult made several efforts to get the infant's attention or turning and looking away while being picked up by a reentering attachment figure, to immediately acknowledging a reentering attachment figure and continued acknowledgement throughout the episode, and (d) resisting-resisting physical contact with an attachment figure or defiant and aggressive behavior toward an attachment figure; from aggressive resistance during contacts with an attachment figure, to an absence of defiance, aggression and resistance of physical contact with an attachment figure.

Six trained raters and the investigator analyzed the videotapes to generate ratings on the seven behavioral scales. Each tape was rated by two raters and the scores assigned were the average of the two raters' judgments for all scales and for every tape. Interrater reliabilities were obtained from ratings of a subsample of five tapes and ranged from 88% to 100% agreement for the seven scales.

Designs for Data Analyses

Two interrelated sets of analyses were planned to address the study hypotheses. The first set addressed the questions of order effects of the procedure and similarity of infant responses to the two attachment figures. For these analyses only ratings from episodes associated with the influence of a single attachment figure were used. Because the order of attachment figures' departures was counterbalanced for the sample as a whole, the specific episodes associated with a mother or second attachment figure would depend on which attachment figure departed first in a particular case. The first set of analyses was also a technical prerequisite for the second set: if infants were found to be responding to their two attachment figures similarly, then analyses to detect experimental effects could proceed as though attachment figures were equivalent independent variables for purposes of experimental manipulations.

The second set of analyses addressed the question of whether or not attachment and exploratory behaviors were induced in the

sample as a whole by manipulating the presence of the two attachment figures and the stranger. For all of these analyses each episode of the procedure was treated as a separate trial, and infant behavior in selected episodes was examined with planned comparisons of differing structures for each of the dependent variables.

Data used in the second set of analyses were converted from ratings on the original scales of measurement to rank data, because descriptive statistics for the rating data of episodes to be compared revealed that the assumptions of repeated measures analysis of variance were not met. The variances were unequal for six variables, paired episode correlation coefficients were unequal for the seventh variable (sociability), and for some variables such as proximity seeking both variances and paired episode correlation coefficients were unequal. Friedman's nonparametric procedures for within subject ranking of data (Marascuilo & McSweeney, 1977) were used as alternatives to analysis of variance for repeated measures procedures. Each subject's ratings on a dependent measure were ordered and corresponding ranks were assigned. Then the converted data for each dependent variable was treated in the following way: (a) rank values were added across subjects for each episode involved in a planned comparison, (b) a coefficient was assigned to the mean of the summarized rank values for each episode to make two counterbalanced sets of episodes for a comparison, and (c) the

statistical analysis was finalized as a confidence interval. Even though they are invalid, results of comparisons based on analysis of variance for repeated measures calculations are also reported for confidence intervals that were not statistically significant based on Friedman methods to enhance the discussion of valid results.

In addition, planned comparisons with nonparametric methods were used to analyze data for the girls' and the boys' subsamples as well as for the whole sample, because gender differences were examined as an aspect of normative infant behavior. Post hoc, intercorrelations of summary scores for each dependent variable in the original scale of measurement were examined to explore the possibility that individual differences accounted for the initial observation of marked differences in variances for episodes used in the planned comparisons.

## Results

### Comparison of Responses to Attachment Figures

To test for departure order effects, two-sample *t*-tests were performed for all variables in episodes where a rating was attributable to the influence of only one attachment figure. This was all episodes except one, seven and thirteen. No order effects were found: Only two of the thirty-four tests were significant which is what one would expect to find by chance.

Infants' behaviors influenced by mothers alone correlated with behaviors influenced by second attachment figures alone

revealed consistent similarity of reaction to the two attachment figures across variables. Table 2 reports the results of the

---

Insert Table 2 about here

---

seven tests. For six of the seven variable pairs examined, Pearson product moment correlations were statistically significant. The absence of a significant correlation between resisting influenced by mother and resisting influenced by the second attachment figure was the only exception to the pattern of correlations. This may be due to the fact that the overwhelming majority of ratings for resisting were at the lowest scale point, indicating an absence of resisting behavior.

A second group of analyses addressed the question of whether of not the infants were biased in their attachment responses toward mothers as a class. The data used for these analyses were based on difference scores obtained by subtracting ratings for behavior influenced by the second attachment figure (i.e. "adult #2") for a variable from behavior influenced by the mother for the same variable for each subject in the sample. Matched pair *t*-tests for all of the dependent variables revealed no statistically significant bias toward mothers for any of the seven variable pairs examined, or no evidence of preference for mothers. The results of this group of tests are summarized in table 3.

---

Insert Table 3 about here

---

Experimental Manipulations

This second set of analyses detected whether or not manipulations of attachment figures' and the stranger's presence were effective in inducing changes across episodes in infants' exploratory and attachment behaviors.

Exploration. Changes which would reveal infant use of both attachment figures as secure bases for exploring the physical environment were predicted for this variable. Specifically, the infants' exploratory behavior would shift from high levels when only attachment figures were present (episodes 1,2,6,7,8,12 and 13) to low levels when only the stranger was present (episodes 4 and 10), and achieve intermediate levels when one attachment figure and the stranger were present (episodes 3,5,,9 and 11). The expectation was that when the stranger and an attachment figure were present the infant would vacillate between social and nonsocial forms of exploration, or be wary of the stranger and therefore distracted from exploration. Figure 1 presents the

---

Insert Figure 1 about here

---

curvilinear pattern delineated by the means of ranks for the exploration variable. The results of the three contrasts revealed in tables 4 and 5 show that the predicted changes

---

Insert Tables 4 and 5 about here

---

actually occurred; infants did use their attachment figures as bases for exploring the physical environment.

Sociability. Normative reactions to the stranger were not predicted, and therefore directional effects were not hypothesized for the planned comparison. There were three possibilities: Infants would be more wary and therefore less sociable when alone with the stranger than when an attachment figure was present, they would be more sociable when alone with the stranger, or they would be equally sociable in all episodes where the stranger was present. Statistical results in tables 4 and 5 show that level of sociability was the same in all episodes where the stranger was present, indicating there was no change in response to the stranger attributable to the presence or absence of an attachment figure and the stranger's behavior.

Distress. Less distress was predicted for episodes in which one attachment figure remained in the room to reassure an infant following the other attachment figure's departure (episodes 2 and 8), than for episodes in which an infant was left alone with the stranger (episodes 4 and 10). The comparison results revealed (see tables 4 and 5) that on average infants did display more distress when left alone with the stranger than when left with the second attachment figure.

Proximity Seeking. The prediction was that infants would be more active in seeking out a returning attachment figure after being alone with the stranger (episodes 5 and 11 when some stress was likely), than in seeking out a returning attachment figure rejoining the infant and an attachment figure who stayed in the room (episodes 7 and 13 when stress was unlikely). A contrast in level of proximity seeking consonant with the prediction would indicate attachment behavior ensuing from both a stressed state and affectively uninhibited attachments. Statistical results revealed no difference in proximity seeking behavior in the two types of reunions. For the sample overall, this indicated absence of a stressed state, which would preclude proximity seeking as an attachment behavioral response, absence of uninhibited attachments or both.

Contact Maintaining. The prediction was that infants would engage in more contact maintaining behavior with an attachment figure in the reunion episodes following being alone with the stranger (episodes 5 and 11 when infants were likely to be stressed), than in episodes where a returning attachment figure's reentry had been preceded by the presence of one attachment figure in the room with the infant (episodes 6,7,8,12 and 13 when infants were unlikely to be stressed). A difference in extent of contact maintaining consistent with the prediction would indicate attachment behavior stemming from a combination of a stressed state and affectively uninhibited attachments.

Contact maintaining is an attachment behavior similar to proximity seeking except that the duration of contact indicates strength of attachment response, while promptness of proximity seeking indicates strength of attachment response. To account for the difference in how these attachment behaviors are gauged, the planned comparison for infants' contact maintaining behavior involved data from seven episodes of the session (see table 4). As shown in table 5, the comparison was not statistically significant, which indicated that on average infants' contact maintaining behavior toward an attachment figure was no greater just after having been alone with the stranger than after having been in the room with an attachment figure.

Inattention. Infants' inattention to reentering attachment figures was examined in a comparison with the same structure as the one for proximity seeking, but no direction of effects was predicted. Three normative outcomes were possible. First, infants could show more inattentive behavior toward a reentering attachment figure in reunions after the stranger and infant had been alone (episodes 5 and 11) than in reunions after the infant had been in the room with one attachment figure (episodes 7 and 13), if infants were both stressed and had affectively inhibited relationships to their attachment figures. Second, infants could show less inattentive behavior toward the reentering figure in reunions after the stranger and infant had been alone (episodes 5 and 11) than in reunions after the infant and one attachment

figure had been in the room together (episodes 7 and 13), if infants were both stressed and had uninhibited relationships to their attachment figures. Last, there could be no difference in level of inattention in the contrasted episodes because of lack of treatment effects of the contrasted reunion situations. Results revealed no difference in inattention in the two types of reunions, or an absence of treatment effects for the sample as a whole.

Resisting. The planned comparison for resisting behavior had the same format as the one for contact maintaining for the same reason. However, no direction of effects was predicted. The alternatives for normative outcome were: a) more resisting behavior toward a reentering attachment figure in reunions after the stranger and infant had been alone (episodes 5 and 11) than in episodes after the infant had been in the room with an attachment figure (episodes 6,7,8,12 and 13), b) less resisting behavior toward a reentering attachment figure in reunions after the stranger and infant had been alone (episodes 5 and 11) than in episodes after the infant had been in the room with an attachment figure (episodes 6,7,8,12 and 13), or c) no difference in level of resisting in the contrasted episodes due to lack of treatment effects for the resisting variable. This last of the possible outcomes was the one obtained; there was no normative resisting response.

Repeated measures analysis of variance. Although they are

technically invalid, confidence intervals for sociability, proximity seeking, contact maintaining, inattention, and contact resisting are presented in table 6, based on analysis of variance

---

Insert Table 6 about here

---

for repeated measures methods of calculation (Marascuilo, 1971). First, the confidence interval for proximity seeking gave the appearance of statistical significance. It is spurious because two assumptions for the methods of calculation employed are not met: Paired episode correlation coefficients are unequal, ranging from $r_{ep7 \cdot ep11} = .03$ to $r_{ep5 \cdot ep11} = .56$, and the episode variances are moderately unequal as shown in table 4. Next, table 6 shows that the confidence interval for contact maintaining also appears to be statistically significant. This is a spurious finding as well because the requisite assumption of equal variances of the episodes compared is not met; table 4 shows the markedly unequal variances. However, if the results for these two variables had been valid they would have provided support for the research hypotheses.

"ep"

Gender Comparisons. Analyses of data for the boys' and the girls' subsamples used the same set of variables and the same structures of planned comparisons applied to the whole sample data. Only one sex difference was found. Boys and girls differed in their patterns of distress response. For boys there was no

significant difference in extent of distress in response to the absence of both attachment figures as compared to the absence of only one attachment figure. Girls, however, were more distressed by the absence of both attachment figures than by the absence of only one. This discrepancy is reflected in the statistically non-significant comparison for boys and its associated one-tailed confidence interval $\hat{\psi}_B$ = -.53 + 1.4, Var. $\hat{\psi}_B$ = .32 (critical value based on $\chi^2$ = 6.25, df = 3, p < .05), in contrast to the statistically significant comparison for girls and its related one-tailed confidence interval corrected for tied ranks $\hat{\psi}^{C}_{G}$ = -1.87 + 1.63, Var. $\hat{\psi}^{C}_{G}$ = .42 (critical value based on $\chi^2$ = 6.25, df = 3, p < .05). For the boys' comparison (n=21) means of the ranks and corresponding weights for episodes 2 and 8 were 2.02 (1) and 2.71 (1) whereas means of the ranks and corresponding weights for episodes 4 and 10 were 2.45 (-1) and 2.81 (-1). In the girls' comparison (n=16) means of ranks and corresponding weights for episodes 2 and 8 were 1.88 (1) and 2.19 (1), but means of ranks and corresponding weights for episodes 4 and 10 were 2.88 (-1) and 3.06 (-1).

Caret
psi
subscript "B"
chi square
superscript "C"
subscript "G"

Intercorrelations of dependent variables

For each of the seven dependent measures and for each subject, a score was generated that was the average of all episode ratings in the original scale of measurement. Intercorrelations of variables based on those composite average scores produced two clear clusters. In the first cluster proximity seeking, contact

maintaining and distress were positively intercorrelated. In the second cluster exploration, and sociability were negatively correlated with proximity seeking, contact maintaining and distress while inattention was negatively correlated with proximity seeking and contact maintaining only. There was one significant correlation outside of the two clusters and one correlation that approached statistical significance; sociability was positively correlated with inattention and exploration. Table 7 presents the correlation matrix for these results.

---

Insert Table 7 about here

---

## Discussion

The first hypothesis stated that the study infants would demonstrate a pattern of similar responses toward their two attachment figures across a full range of behaviors that pertain to an attachment relationship. The results of the correlation tests and the tests for mother bias gave clear support to this hypothesis, and constitute the first element of a challenge to the view that all one year old infants with multiple attachments are monotropically biased toward one superordinate attachment figure. Kotelchuck (1976) used the same laboratory procedure with traditionally reared 12-month-old white American infants and found their responses biased toward mothers even though infant responses to mothers and fathers were similar. Fox (1977) used the same

procedure and, like Kotelchuck, found Israeli kibbutz reared infants of this age biased in their reunion responses toward their mothers as compared to their metaplot who were their primary caretakers. The pattern of unbiased, similar responses of our subjects to their two attachment figures stands in marked contrast to these other groups. Most probably, our findings are attributable to specific features of the African American cultural and social background of our subjects.

African American culture (Shimkin et al., 1978; Stack 1974) assumes that all familiar caretakers of a young child, including fathers and other males, are capable of performing both the affective and practical functions that are theoretically attributed to attachment figures. In an ethnographic study, Young (1970) reported that African American toddlers raised in traditional settings are equally responsive to most of their caretakers yet develop and retain relationships to their mothers that are affectively secure. The results of tests of the first hypothesis suggest that the mother and at least one other major caretaker might actually be equally effective as elicitors of nonpathological attachment responses, and provided a technically defensible starting point for making such a determination.

Results provided support for our second hypothesis as well. The prediction was that infants would use both attachment figures as bases for exploring the environment, and the findings revealed that they definitely did so in exploring the physical environment

of the laboratory playroom. In this respect, infants demonstrated behaviors indicative of adaptive infant-attachment figure relationships according to one of Ainsworth's (Ainsworth et al., 1978) and Bowlby's (1982) pivotal criteria, and these behaviors were not attributable to tangential factors such as the presence of the stranger.

The primary purpose of the sociability contrast was to tease apart the impact of attachment figure absence from the stranger's presence and behavior during the two episodes when the infant and stranger were alone, for purposes of interpreting expected change in infant exploratory behavior. The fact that there was no change in infant sociability toward the strange when attachment figures left the room as compared to when they were present, indicated that the drop in exploratory behavior occurred as a response to attachment figures' absence only; the stranger's presence had no impact on this behavior. Concomitant to this, no impact of stranger behaviors designed to be mildly disconcerting were observed either.

The third hypothesis stated that the infants would use their attachment figures as sources of consolation, <u>if stressed</u>. Support for this hypothesis was not found, rendering a decisive test of the monotropy thesis incomplete. However, the configuration of pertinent results highlights the importance of giving attention to the conditional nature of the hypothesis as well as the conditional nature of attachment theory regarding the

circumstances under which infants will protest separation from an attachment figure and/or seek proximity to and physical contact with an attachment figure. These findings also highlight the value of built-in procedural checks to confirm that the attachment and exploratory behavioral systems are actually activated for infant participants in laboratory sessions where they are presumed and assessed.

The boys did not demonstrate more distress when left alone in the room with the stranger than when left with an attachment figure, even though the girls did. Neither boys nor girls demonstrated less sociability toward the stranger when left in the room alone with her than when they encountered her in the presence of an attachment figure. In this connection, it is important to recall that an unchanging level of sociability was found even though there were built-in elements of stranger behavior in the absence of attachment figures designed to challenge infant composure. Together the results of the planned comparisons for distress and sociability behavior indicate that the infants were minimally distressed during separations from both attachment figures, and suggest that most of them were not stressed at the point of reunion with attachment figures after having been alone with the stranger.

The planned comparisons for infant reunion behaviors, both those indicative of uninhibited attachment and those indicative of affectively defensive attachment, were structured to ascertain the

role of a stressed state in the infants' reunion responses as well as identify types of predominate attachment responses. Reunion behaviors under conditions when infant stress was improbable were compared to reunion behaviors when infant stress was probable (i.e. following episodes of having been alone with the stranger). Statistically valid results showed that infants' proximity seeking and contact maintaining behaviors, which indicate uninhibited attachment, were the same in the contrasting conditions, and their inattention and resisting behaviors, which indicate contrasting inhibited attachment, were the same as well. This complete absence of treatment effects for these behaviors suggests a pivotal role for the stress factor. Most probably, the precondition for activation of behaviors motivated by consolation seeking--stress--was lacking or present in a very weak form for most infants and the behavior ratings obtained do not reflect true attachment responses.

The minimal response to separations and casual response to reunions are best interpreted as consequences of familiarity with brief separations from attachment figures and frequent entries into new environments. Most of the infants went to at least one household other than their home on a daily basis and experienced separations from attachment figures of far longer duration than those entailed in the laboratory procedure without upset. Many parents reported that infants were accustomed to regular visits to homes of relatives and friends, and visits without them to the

homes of relatives and friends of supplementary caretakers. As a probable consequence, the strangeness of the laboratory playroom was construed as novelty and aroused the infants' curiosity. Thus for most infants with prior experiences like those in this study something much more disconcerting than brief separations from attachment figures while remaining in a pleasant room with toys and a friendly stranger is needed to effectively trigger attachment responses to attachment figures. The results of the analysis of variance for repeated measures comparisons for the proximity seeking and contact maintaining variables suggest that the procedure used is effective in inducing uninhibited attachment responses in a minority African American infants. Nonetheless, pending the invention of a procedure that more effectively induces stress in most infants like those studied two things remain unknown: Whether or not nonpathological proximity promoting behaviors are the normative response of distressed African American infants toward their attachment figures, and whether or not the monotropy thesis applies to infants' distressed state responses toward attachment figures.

There are, of course, alternative explanations for the reunion behavior outcomes. There is the possibility that the measures used were too insensitive to detect meaningful variation in infant reunion responses. This, however, seems improbable given the fact that they are essentially the same as Ainsworth's rating scales. There is also the possibility that the reunions

that were supposed to tap behavior ensuing from a stressed state did so for many of the infants, but diversity of individual differences made normative responses undetectable. Along with the repeated measures analysis of variance results, the intercorrelations of variables provide some information pertinent to this last possibility.

Intercorrelations of dependent measures revealed that there were individual differences among infants in overall response to the laboratory procedure and, most probably, associated individual differences in response to the episode changes in the procedure. This is the most likely explanation for the differences in variances of scores for episodes used in each of the planned comparisons. However, individual differences were not a broadly varied assortment; they reflected a single bipolar dimension of extraversion verses wariness and staying close to attachment figures. The majority of infants exhibited a gregariousness that is encouraged by African American culture (Young, 1970). They engaged in exploratory and sociable behaviors and were inattentive to their attachment figures' returns to the room; they also exhibited little distress, proximity seeking or contact maintaining behavior. Others who were distressed engaged in proximity seeking and contact maintaining behavior instead of exploratory and sociable behavior. Overall, findings from the intercorrelations of dependent measures complement those revealing substantial although incomplete support of the research

hypotheses. They also provide support for the tentative inference that culturally sanctioned patterns of caregiving do not produce pathological infant-attachment figure relationships for most infants while they do produce infant traits consonant with African American socialization objectives.

There are many issues that the findings presented imply but cannot address that future studies could fruitfully examine for a fuller understanding of attachment phenomena in African American infants--factors such as infant behavior toward all identifiable attachment figures, configurations of caregiving arrangements, stability of caregiving arrangements, histories of caregiver-infant interactions, post-natal health, temperament and sex differences are among them. Overall, more study of attachment phenomena in African American children is needed, especially research that uses culturally based patterns of child care as a point of departure. The issues that were examined and the findings reported only begin to fill the void in information on African American children's attachments. Viewed in a broad perspective, they highlight the need for exacting study of attachment relationships of infants from diverse cultural groups from a variety of perspectives including the value bases of the cultures studied.

References

Ainsworth, M.D. (1967). Infancy in Uganda. Baltimore: Johns Hopkins Press.

Ainsworth, M.D. (1982). Attachment: Retrospect and Prospect. In C.M. Parkes & J. Stevenson-Hinde (Eds.), The place of attachment in human behavior, (pp. 3-30). New York: Basic Books.

Ainsworth, M.D., Blehar, M.C., Waters, E., & Wall, S. (1978). Patterns of attachment: A psychological study of the strange situation. Hillsdale NJ: Erlbaum.

Ainsworth, M.D., & Wittig, B.A. (1969). Attachment and exploratory behavior of one-year-olds in a strange situation. In B.M. Foss (Ed.), Determinants of infant behavior IV (pp. 111-136). London: Meuthen.

Barnes, E.J. (1980). The Black community as the source of positive self-concept for Black children: A theoretical perspective. In R.L. Jones (Ed.), Black psychology (2nd ed.), (pp. 106-130). New York: Harper & Row.

Beckett, J.O. (1976). Working wives: A racial comparison. Social Work, 21(6), 463-471.

Berry, J.W. (1979). Introduction to Methodology. In H.C. Triandis & J.W. Berry (Eds.), Handbook of cross-cultural psychology: Methodology, Vol.2. (pp. 1-28). Boston: Allyn & Bacon.

Billingsley, A. (1968). Black families in white America. Englewood Cliffs, NJ: Prentice-Hall.

Blau, P., & Duncan, O. (1967). The American occupational structure. New York: Wiley & Sons.

Bowlby, J. (1951). Maternal care and mental health. Bulletin of the World Health Organization, 3, 355-534.

Bowlby, J. (1958). The nature of the child's tie to his mother. International Journal of Psychoanalysis, 39, 350-373.

Bowlby, J. (1969). Attachment and loss Vol. I: Attachment. New York: Basic Books.

Bowlby, J. (1973). Attachment and loss Vol. II: Separation, Anxiety and Anger. New York: Basic Books.

Bowlby, J. (1982). Attachment and loss Vol. I: Attachment (2nd ed.). New York: Basic Books.

Caldwell, B.M., Hersher, L., Lipton, E.L., Richmond, J.B., Stern, G.A., Eddy, E., Drachman, R., & Rothman, A. (1963). Mother-infant interaction in monomatric and polymatric families. American Journal of Orthopsychiatry, 33, 653-664.

Campbell, D.T., & Stanley, J.C. (1966). Experimental and quasi-experimental designs for research. Chicago: Rand McNally.

Children's Defense Fund. (1985). Black and white children: Key facts. Washington DC: Author.

Clarke-Stewart, K.A. (1973). Interactions between mothers and their young children: Characteristics and consequences. Monographs of the Society for Research in Child Development, 38(6-7, Serial No. 153).

Crittenden, P.M. (1988). Relationships at risk. In J. Belsky & T. Nezworski (Eds.), Clinical implications of attachment, (pp. 136-175). Hillsdale, NJ: Erlbaum.

DeVore, I., & Konner, M.J. (1974). Infancy in hunter-gatherer life: An ethological perspective. In N.F. White (Ed.), Ethology and psychiatry (113-141). Toronto: University of Toronto Press.

Fox, N. (1977). Attachment of kibbutz infants to mother and metapelet. Child Development, 48, 1228-1239.

Goosens, F. A. (1987). Maternal employment and day-care: Effects of attachment. In L.W.C. Tavecchio & M.H. van IJzendoorn (Eds.), Attachment in social networks: Contributions to the Bowlby-Ainsworth attachment theory (pp. 135-174). New York: Elsevier Science Publishing.

Hansen, J.F. (1980). Children's attachment to mother figures and the social development of black infants and young children. Unpublished manuscript, University of California, Berkeley, Psychology Department.

Hayghe, H. (1986). Rise in mothers' labor force activity includes those with infants. Monthly Labor Review, 109(2), 43-45.

Hock, E. (1980). Working and non-working mothers and their infants: A comparative study of maternal caregiving characteristics and infant social behavior. Merrill-Palmer Quarterly, 26, 79-101.

Jackson, J.F. (in press). An experimental procedure and

scales for assessing attachment relationships in black infants--alternatives to Ainsworth methods. In R.L. Jones (Ed.), Handbook of tests and measures of black populations.

Kermoian, R., & Leiderman, P.H. (1986). Infant attachment to mother and child caretaker in an east African community. International Journal of Behavioral Development, 9(4), 455-469.

Kotelchuck, M. (1976). The infant's relationship to the father: Experimental evidence. In M.E. Lamb (Ed.), The role of the father in child development (pp. 329-344). New York: Wiley & Sons.

Kratochwill, T.R. (1978). Foundations of time-series research. In T.R. Kratochwill (Ed.), Single subject research: Strategies for evaluating change (pp. 1-100). New York: Academic Press.

Kuhn, D. (Ed.). (1990). Special topic: Cross-cultural validity of attachment theory. Human Development, 26(1).

Lee, R.B. (1979). The !Kung San: Men, women and work in a foraging society. Cambridge: Cambridge University Press.

Lee, R.B., & DeVore, I. (1976). Kalahari hunter gatherers: Studies of the !Kung San and their neighbors. Cambridge, MA: Harvard University Press.

Leiderman, P.H., & Leiderman, G.F. (1974). Affective and cognitive consequences of polymatric infant care in the east African highlands. In A.D. Pick (Ed.) Minnesota Symposium on Child Psychology, Vol. VIII. (pp. 81-110). Minneapolis: University of Minnesota Press.

LeVine, R.A. (1990). Infant environments in psychoanalysis: A cross-cultural view. In J.W. Stigler, R.A. Shweder, & G. Herdt (Eds.), Cultural psychology: Essays on comparative human development. (pp. 454-474). New York: Cambridge University Press.

LeVine, R.A., & Miller, P.M. (1990). Commentary. Human Development, 33(1), 73-80.

Lyons-Ruth, K., Connell, D.B., & Grunebaum, H.U. (1990). Infants at social risk: Maternal depression and family support services as mediators of infant development and security of attachment. Child Development, 61(1), 85-98.

Marascuilo, L.A. (1971). Statistical methods for behavioral science research. New York: McGraw-Hill.

Marascuilo, L.A., & McSweeney, M. (1977). Nonparametric and distribution-free methods for the social sciences. Monterey CA: Brooks/Cole.

Marvin, R.S., VanDevender, T.L., Iwanaga, M.I., LeVine, S., & LeVine, R.A. (1977). Infant-caregiver attachment among the Hausa of Nigeria. In H. McGurk (Ed.), Ecological factors in human development (pp. 247-260). Amsterdam: North-Holland.

Meisenheimer, J.R. (1990). Black college graduates in the labor market, 1979 and 1989. Monthly Labor Review, 113(11), 13-21.

Nahemow, N.R. (1984). Grandparenthood in transition. In K.A. McCluskey & H.W. Reese (Eds.), Life-span developmental psychology: Historical effects, (pp. 249-277). Orlando: Academic.

O'Connell, M., & Rogers, C.C. (1983). Child care arrangements of working mothers: June 1982 (Current Population Reports Series P-23, No. 129). Washington DC: U.S. Government Printing Office.

Ogbu, J.U. (1981). Origins of human competence: A cultural-ecological perspective. Child Development, 52(2), 413-429.

Presser, H.B. (1986). Shift work among American women and child care. Journal of Marriage and the Family, 48, 551-563.

Presser, H.B. (1987). Work shifts of full-time dual-earner couples: Patterns and contrasts by sex of spouse. Demography, 24(1), 99-112.

Presser, H.B. (1989). Some economic complexities of child care provided by grandmothers. Journal of Marriage and the Family, 51, 581-591.

Reed, G., & Leiderman, P.H. (1981). Age-related changes in attachment behavior in polymatrically reared infants: The Kenyan Gusii. In T.M. Field, A.M. Sostek, P. Vietze & P.H. Leiderman (Eds.), Culture and early interactions (pp. 215-234). Hillsdale NJ: Erlbaum.

Research and Clinical Center for Child Development, (1990). Is the Ainsworth strange situation applicable to the study of attachment in Japanese infants? (Annual Report Occasional Papers No. 2). Sapporo, Japan: author.

Sagi, A., Lamb, M.E., Lewkowicz, K.S., Shoham, R., Dvir, R., & Estes, D. (1985). In I. Bretherton & E. Waters (Eds.), Growing

points of attachment theory and research (pp. 257-275). Monographs of the Society for Research in Child Development, 50(1-2, Serial No. 209).

Scanzoni, J. (1975). Sex roles, economic factors, and marital solidarity in black and white marriages. Journal of Marriage and the Family, 37, 130-144.

Shimkin, D., Louie, G., & Frate, D. (1978). The black extended family: A basic rural institution and a mechanism of urban adaptation. In D. Shimkin, G. Louie & D. Frate (Eds.), The extended family in black societies (pp. 25-147). The Hague: Mouton.

Smith, P.K., & Noble, R. (1987). Factors affecting the development of caregiver-infant relationships. In L.W.C. Tavecchio & M.H. van IJzendoorn (Eds.), Attachment in social networks: Contributions to the Bowlby-Ainsworth attachment theory (pp. 93-131). New York: Elsevier Science Publishing.

Stack, C.B. (1970). The kindred of Viola Jackson: Residence of an urban black American family. In N.E. Whitten & J.F. Szwed (Eds.), Afro-american anthropology: Contemporary perspectives (pp. 303-311). New York: Free Press.

Stack, C.B. (1974). All our kin: Strategies for survival in a black community. New York: Harper & Row.

Stack, C.B. (1975). Who raises black children: Transactions of child givers and child receivers. In T.R. Williams (Ed.), Socialization and communication in primary groups (world

anthropology) (pp. 183-205). The Hague: Mouton.

Stinson, J.F. (1990). Multiple jobholding up sharply in the 1980's. Monthly Labor Review, 113(7), 3-10.

Tavecchio, L.W.C., & van IJzendoorn, M.H. (1987). Perceived security and extension of the child's rearing context: A parent-report approach. In L. W.C. Tavecchio & M.H. van IJzendoorn (Eds.), Attachment in social networks: Contributions to the Bowlby-Ainsworth attachment theory (pp. 35-92). New York: Elsevier Science Publishing.

Tronick, E.Z., Morelli, G.A., & Winn, S. (1987). Multiple caretaking of Efe (Pgymy) Infants. American Anthropologist, 89, 96-106.

Tronick, E.Z., Winn, S., & Morelli, G.A. (1985). Multiple caretaking in the context of human evolution: Why don't the Efe know the western prescription for child care? In M. Reite & T. Field (Eds.), The psychobiology of attachment and Separation

U.S. Bureau of the Census (1974). Statistical Abstracts of the United States: 1974 (95th ed.), (p. 336). Washington DC: U.S. Government Printing Office.

van Ijzendoorn, M.H. (1990). Developments in cross-cultural research on attachment: Some methodological notes. Human Development, 33(1), 3-9.

Waters, E., Vaughn, B.E., & Egeland, B.R. (1980). Individual differences in infant-mother attachment relationships at age one: Antecedents in neonatal behavior in an urban, economically

disadvantaged sample. Child Development, 51(1), 208-216.

Werner, E.E. (1984). Child care: Kith, kin, and hired hands. Baltimore: University Park Press.

White, M.M. (1987). We are family!: Kinship and solidarity in the Black community. In G. Gay and W.L. Baber (Eds.), Expressively Black: The cultural basis of ethnic identity, (pp. 17-34). New York: Praeger.

Winn, S., Tronick, E.Z., Morelli, G.A. (1989). The infant and the group: A look at Efe Caretaking Practices in Zaire. In J.K. Nugent, B.M. Lester, & T.B. Brazelton (Eds.), The cultural context of infancy, Vol. 1: Biology, culture, and infant development, (pp. 87-109).

Young, V.H. (1970). Family and childhood in a southern negro community. American Anthropologist, 72(2), 269-288.

Table 1

Adults Present with Infant for Successive Episode of Experiment

| Episode | Mother Departs First | Adult #2 Departs First |
|---|---|---|
| 1 | mother, adult #2 | adult #2, mother |
| 2 | adult #2 | mother |
| 3 | adult #2, stranger | mother, stranger |
| 4 | stranger | stranger |
| 5 | stranger, mother | stranger, adult #2 |
| 6 | mother | adult #2 |
| 7 | mother, adult #2 | adult #2, mother |
| 8 | mother | adult #2 |
| 9 | mother, stranger | adult #2, stranger |
| 10 | stranger | stranger |
| 11 | stranger, adult #2 | stranger, mother |
| 12 | adult #2 | mother |
| 13 | adult #2, mother | mother, adult #2 |

Note. The term "adult #2" refers to any one of the 32 biological fathers or 5 female relatives who participated as second attachment figures.

Table 2

Correlations of Infants' Mother Influenced and Second Attachment Figure Influenced Behaviors

Superscript "a"

| Variable Pair[a] | M | SD | r |
|---|---|---|---|
| Exploration | | | .42** |
| Influenced by mother | 3.93 | 1.17 | |
| Influenced by adult #2 | 3.81 | 1.31 | |
| Sociability | | | .38* |
| Influenced by mother | 4.05 | 1.63 | |
| Influenced by adult #2 | 4.21 | 1.69 | |
| Distress | | | .65*** |
| Influenced by mother | 1.84 | 1.06 | |
| Influenced by adult #2 | 1.71 | .97 | |
| Proximity Seeking | | | .66*** |
| Influenced by mother | 2.87 | 1.65 | |
| Influenced by adult #2 | 2.63 | 1.25 | |
| Contact Maintaining | | | .34* |
| Influenced by mother | 1.82 | 1.26 | |
| Influenced by adult #2 | 1.95 | 1.25 | |
| Inattention | | | .42** |
| Influenced by mother | 1.95 | 1.09 | |
| Influenced by adult #2 | 2.26 | 1.38 | |

(table continues)

| Variable Pair• | M | SD | r |
|---|---|---|---|
| Resisting | | | -.14 |
| Influenced by mother | 1.11 | .26 | |
| Influenced by adult #2 | 1.11 | .26 | |

Note. The term "adult #2" refers to any adult from the set of 37 second attachment figures.

•N = 37 for all tests

•p < .05. ••p < .01. •••p <.001.

Table 3

Matched Pair t-Tests for Mother Influenced and Second Attachment Figure Influenced Behaviors

| Difference Score Variable• | M of d | SD of d | t |
|---|---|---|---|
| Exploration | .13 | 1.35 | .56 |
| Sociability | -.16 | 1.85 | -.53 |
| Distress | .14 | .86 | .96 |
| Proximity Seeking | .24 | 1.29 | 1.14 |
| Contact Maintaining | -.14 | 1.46 | -.56 |
| Inattention | -.28 | 1.35 | -1.28 |
| Resisting | -.01 | .42 | -.10 |

Note. For all variables second attachment figure influenced scores were subtracted from mother influenced scores to produce difference scores.

alpha •N = 37, $\alpha$ = .05 for each test;

Table 4

Descriptive Statistics for Planned Comparisons by Episode

| Episode | M | $SD^2$ | $\bar{R}$• | Contrast Coefficients H vs. L | H vs. M | M vs. L |
|---|---|---|---|---|---|---|
| | | | Exploration | | | |
| 1 | 5.42 | 1.68 | 10.28 | 1 | 2 | |
| 2 | 4.92 | 2.14 | 9.35 | 1 | 2 | |
| 3 | 4.25 | 2.65 | 7.89 | | -3.5 | 1 |
| 4 | 1.65 | 2.12 | 3.47 | -3.5 | | -2 |
| 5 | 3.32 | 3.85 | 6.42 | | -3.5 | 1 |
| 6 | 4.03 | 3.03 | 7.89 | 1 | 2 | |
| 7 | 4.20 | 4.22 | 8.03 | 1 | 2 | |
| 8 | 4.20 | 3.91 | 8.00 | 1 | 2 | |
| 9 | 3.08 | 3.47 | 5.99 | | -3.5 | 1 |
| 10 | 1.87 | 2.45 | 3.62 | -3.5 | | -2 |
| 11 | 2.87 | 3.68 | 5.31 | | -3.5 | 1 |
| 12 | 3.89 | 4.54 | 7.46 | 1 | 2 | |
| 13 | 3.84 | 4.08 | 7.18 | 1 | 2 | |

(table continues)

| Episode | M | $SD^2$ | $\overline{R}$ | Contrast Coefficients |
|---|---|---|---|---|
| | | Sociability | | |
| 3 | 3.81 | 4.62 | 3.77 | 1 |
| 4 | 4.68 | 4.34 | 3.81 | -2 |
| 5 | 3.32 | 4.23 | 2.58 | 1 |
| 9 | 4.14 | 5.12 | 3.65 | 1 |
| 10 | 4.32 | 4.34 | 3.45 | -2 |
| 11 | 5.05 | 4.39 | 4.38 | 1 |
| | | Distress | | |
| 2 | 1.06 | .11 | 1.96 | 1 |
| 4 | 1.92 | 2.19 | 2.64 | -1 |
| 8 | 1.70 | 1.49 | 2.49 | 1 |
| 10 | 2.32 | 3.23 | 2.97 | -1 |
| | | Proximity Seeking | | |
| 5 | 2.78 | 3.45 | 2.54 | 1 |
| 7 | 2.27 | 3.42 | 2.32 | -1 |
| 11 | 3.41 | 4.64 | 2.85 | 1 |
| 13 | 2.35 | 3.12 | 2.39 | -1 |

(table continues)

| Episode | M | $SD^2$ | $\overline{R}$ | Contrast Coefficients |
|---|---|---|---|---|
| | | Contact Maintaining | | |
| 5 | 1.84 | 3.03 | 4.05 | 2.5 |
| 6 | 1.35 | 1.01 | 3.54 | -1 |
| 7 | 1.24 | .52 | 3.34 | -1 |
| 8 | 1.97 | 2.64 | 4.05 | -1 |
| 11 | 2.78 | 5.23 | 4.88 | 2.5 |
| 12 | 2.19 | 4.66 | 4.16 | -1 |
| 13 | 1.65 | 1.85 | 3.86 | -1 |
| | | Inattention | | |
| 5 | 2.16 | 3.03 | 2.55 | 1 |
| 7 | 2.03 | 2.14 | 2.45 | -1 |
| 11 | 1.92 | 2.02 | 2.36 | 1 |
| 13 | 2.22 | 2.34 | 2.62 | -1 |

(table continues)

| Episode | M | SD | R* | Contrast Coefficients |
|---|---|---|---|---|
| | | Resisting | | |
| 5 | 1.03 | .03 | 3.89 | 2.5 |
| 6 | 1.08 | .13 | 3.91 | -1 |
| 7 | 1.19 | .27 | 4.27 | -1 |
| 8 | 1.05 | .11 | 3.81 | -1 |
| 11 | 1.11 | .16 | 4.00 | 2.5 |
| 12 | 1.24 | .36 | 4.27 | -1 |
| 13 | 1.08 | .13 | 3.88 | -1 |

Note. N = 37 for all comparisons.

*Mean of within subject ranks.

Table 5

Confidence Intervals and Statistics for Nonparametric Planned Comparisons

$\chi^2$-Critical Value ← chi

| Variable | Var.* | Statistic | df | 1-α |
|---|---|---|---|---|
| caret / $\hat{\psi}_i$ Exploration: | | | | |
| $\hat{\psi}_{h/i} = 33.38 - (13.36)^{1/2}(6.39)^{1/2}$ | 6.39 | 13.36 | 8 | .90 |
| $= 24.14^{*}$ | | | | |
| $\hat{\psi}_{h/a} = 26.75 - (15.99)^{1/2}(22.89)^{1/2}$ | 22.89 | 15.99 | 10 | .90 |
| $= 7.61^{*}$ | | | | |
| $\hat{\psi}_{a/i} = 11.43 - (9.24)^{1/2}(1.14)^{1/2}$ | 1.14 | 9.24 | 5 | .90 |
| $= 8.19^{*}$ | | | | |
| Sociability: | | | | |
| $\hat{\psi} = -.14 \pm (11.07)^{1/2}(1.14)^{1/2}$ | 1.14 | 11.07 | 5 | .95 |
| Distress: superscript "b" | | | | |
| $\hat{\psi}_{c}^{*} = -1.16 + (6.25)^{1/2}(.1858)^{1/2}$ | .1858 | 6.25 | 3 | .90 |
| subscript "c" $= -.08^{*}$ | | | | |
| $\hat{\psi} = -1.16 + (6.25)^{1/2}(.18)^{1/2}$ | .18 | 6.25 | 3 | .90 |
| $= -.10^{*}$ | | | | |
| Proximity Seeking: | | | | |
| $\hat{\psi} = .68 - (6.25)^{1/2}(.18)^{1/2}$ | .18 | 6.25 | 3 | .90 |

(table continues)

African Amer.

60

$^2$-Critical Value

| Variable | Var.[a] | Statistic | df | 1- |
|---|---|---|---|---|
| Contact Maintaining: | | | | |
| $\hat{\psi} = 3.38 - (10.64)^{1/2}(2.21)^{1/2}$ | 2.21 | 10.64 | 6 | .90 |
| Inattention: | | | | |
| $\hat{\psi} = -.17 \pm (7.81)^{1/2}(.18)^{1/2}$ | .18 | 7.81 | 3 | .95 |
| Resisting: | | | | |
| $\hat{\psi} = -.48 \pm (12.59)^{1/2}(2.21)^{1/2}$ | 2.21 | 12.59 | 6 | .95 |

[a] $\text{Var.}\hat{\psi} = k(k-1)/12\sum_{k=1}^{k} a_k^2/n$ (Marascuilo & Mcsweeney, 1977, pp. 362-366). Summation

[b] Contrast value corrected for ties.

*$p < .05$, one-tailed.

Table 6

Confidence Intervals and Statistics for Comparisons Using Repeated Measures Analysis of Variance

S• - Critical Value

| Variable | Var.[b] | Statistic | $df_1$ | $df_2$ | 1- |
|---|---|---|---|---|---|
| Sociability: | | | | | |
| $\hat{\psi} = -1.68 \pm (3.32)(1.11)^{1/2}$ | 1.11 | 3.32 | 5 | 180 | .95 |
| Proximity Seeking: | | | | | |
| $\hat{\psi} = 1.57 - (2.55)(.31)^{1/2}$ | .31 | 2.55 | 3 | 108 | .90 |
| $= .14$* | | | | | |
| Contact Maintaining: | | | | | |
| $\hat{\psi} = 3.15 - (3.26)(.81)^{1/2}$ | .81 | 3.26 | 6 | 216 | .90 |
| $= .22$* | | | | | |
| Inattention: | | | | | |
| $\hat{\psi} = -.17 \pm (2.87)(.20)^{1/2}$ | .20 | 2.87 | 3 | 108 | .95 |
| Resisting: | | | | | |
| $\hat{\psi} = -.29 \pm (3.55)(.05)^{1/2}$ | .05 | 3.55 | 6 | 216 | .95 |

[a] $S = [\nu_1 F_{\nu_1,\nu_2}(1-\alpha)]^{1/2}$. [b] $\mathrm{Var}.\hat{\psi} = \sum_{K>1}^{k} a_k^2/n$ MSR (Marascuilo, 1971, pp. 458-467).

*$p < .05$, one-tailed.

Table 7

Intercorrelations of Dependent Variables

| Variable | 2. | 3. | 4. | 5. | 6. | 7. |
|---|---|---|---|---|---|---|
| 1. Exploration | .26 p=.06 | .10 | .22 | -.32• | -.46•• | -.39• |
| 2. Sociability | -- | .32• | .24 | -.33• | -.38• | -.49•• |
| 3. Inattention | | — | .17 | -.63••• | -.35• | -.22 |
| 4. Resisting | | | -- | -.08 | -.21 | -.13 |
| 5. Proximity Seeking | | | | -- | .60••• | .43•• |
| 6. Contact Maintaining | | | | | -- | .59••• |
| 7. Distress | | | | | | -- |

Note. N = 37 for all correlations

•p < .05. ••p < .01. •••p < .001.

$A_1$ } Mother or Second Attachment Figure,
$A_2$ } Depending on Order of Departure

S Stranger

Figure Caption

Figure 1. Level of infant exploration in means of within subject ranks of exploration scores as an effect of adults in the room in each episode of the experimental session.